

REMARKS

Claims 1-20 are pending. The Office action rejects claims 1-20 on new grounds.

Rejections of Claims 1-, 7, and 16-19

under 35 U.S.C. §103(a)

The Office action rejects claims 1-3, 7, and 16-19 under 35 U.S.C. §103(a) over allegedly admitted prior art (APA) in view of Haruhiko, JP No. 07-199866 and further in view of Keeney et al. (PUB US 2002/0113766A1) ("Keeney"). Applicants respectfully traverse this rejection. As explained below, claims 1-3, 7, and 16-17 are patentable under 35 U.S.C. §103(a) over any permissible combination of APA and the cited references.

Claims 1 and 16, and their dependent claims 2-3, 7, and 17-19, are allowable under 35 USC §103(a) at least because they recite selectively connecting data lines such that image data is simultaneously applied to two data lines. Specifically, the subject application in claim 1 recites:

"at least one switch responsive to a corresponding control signal to selectively connect two of the data lines to each other such that image data applied by a data driver is simultaneously applied to at least two data lines;"

and claim 16 recites:

"means for selectively connecting two column lines to each other such that image data applied by a data driver is simultaneously applied to two data lines."

The Office Action asserts that Haruhiko teaches a switch that is responsive to a corresponding control signal to selectively connect two data lines to each other. However, Haruhiko teaches connecting adjacent data lines together only during non-imaging periods, and then only for the purpose of

reducing power consumption. In particular, Haruhiko teaches an LCD display operated such that adjacent column lines are driven out of phase: when one has a plus voltage the other has a negative voltage. Additionally, the drive potential of each column line is reversed in subsequent imaging periods. Thus, lines having one polarity of stored charge, for example created by +5 volts, have to be charged to another potential, for example to -5 volts, before the next imaging period, while adjacent lines having the opposite polarity (-5 volts) also have to be reversed. To reduce power consumption, adjacent column lines, which are charged to opposite potentials, are shorted together in non-imaging periods.

Keeney teaches repairing an inoperative pixel (or pixels) by disconnecting the pixel (or pixels) from its (their) drive(s) and reconnecting the inoperative pixel (or pixels) to another drive (or drives), reference, for example, paragraph 0037, Figure 1, and Figure 2. To that end, Keeney teaches the use of bypass latches and multiplexers to selectively connect pixels to drive circuitry. However, nowhere does Keeney teach, discuss, disclose, or suggest selectively connecting data lines together. In fact, Keeney discloses in paragraph 0034 that defective column lines will render an entire display unusable, and suggests adding spare rows and columns.

In contrast, claims 1 and 16 require that image data is selectively and simultaneously applied to two data lines. Such is not taught in or suggested by APA or Haruhiko or Keeney, either individually or in combination.

Thus independent claims 1 and 16 are allowable over the cited references. Furthermore, claims 2-3, 7, and 17-19, which depend from allowable base claims, are also allowable. Accordingly, withdrawal of the 35 U.S.C. §103 rejection of claims 1-3, 7, and 16-19 is respectfully requested.

Rejections of Claims 4-6 and 20
under 35 U.S.C. §103(a)

The Office Action rejects claims 4-6 and 20 under 35 U.S.C. §103(a) over applicant's admitted prior art (APA), Haruhiko, and Keeney as aforementioned in claims 1 and 17, and further in view of Lee et al. (US 6,028,442) ("Lee"). Applicants respectfully traverse this rejection. Claims 1 and 16, from which claims 4-6 and 20 depend, are patentable under 35 USC §103(a) at least because the patentable features mentioned above are not found in any combination of the cited materials.

As discussed earlier, neither APA, Haruhiko, nor Keeney teach or disclose the invention defined by independent claims 1 and 16, upon which claims 4-6 and 20 depend. Lee does not make up for the deficiencies in those references. Lee teaches testing groups of data lines by shorting numerous data lines together and then applying a test voltage to the shorted lines. However, Lee does not discuss or suggest simultaneously applying image data to two column lines, and does not suggest applying image data from a data driver to two column lines. In contrast, amended claims 1 and 16 relate to image data that is simultaneously applied to two data lines from a data driver.

Thus independent claims 1 and 16 are allowable over the cited references, including Lee. Furthermore, claims 4-6 and 20, which depend from those allowable base claims, are also allowable. Accordingly, withdrawal of the U.S.C. §103 rejections of claims 4-6 and 20 are respectfully requested.

Rejection of Claims 8-11 and 13-15
under 35 U.S.C. §103(a)

The Office Action rejects claims 8-11 and 13-15 under 35 U.S.C. §103 over Henley (US Patent No. 5,459,410) in view of Haruhiko and further in view of Keeney. Applicants respectfully traverse this rejection. As explained below, claims 8-11 and 13-15 are patentable under 35 U.S.C. §103(a) over any permissible combination of Henley in view of Haruhiko and Keeney.

Independent claim 8 and its dependent claims 8-11 and 13-15 are allowable under 35 USC § 103(a) at least because claim 8 recites identifying a defective column, and then selectively connecting a pixel of the defective column to a second column such that image data applied to the second column is applied to the pixel.

The teachings of Haruhiko and of Keeney were discussed earlier. For brevity those comments will not be repeated. Henley teaches an LCD inspection process in which repairable defects are identified and corrected early in the manufacturing process. Open and shorted lines (columns and rows) are identified and repaired by depositing conductive material or by laser ablation.

However, in contrast to the invention recited in claim 8, Henley does not teach or suggest connect a pixel of a defective column to a second column such that image data that is applied to the second column is applied to the pixel. In fact, Henley does not use image data at all. Furthermore, neither Haruhiko nor Keeney teach, disclose, or suggest connecting a pixel of a defective column to a second column such that image data that is applied to the second column is applied to the pixel.

Thus, independent claim 8 is allowable over the cited references. Furthermore, claims 9-11 and 13-15 which depend from claim 8 are also allowable. Accordingly, withdrawal of the rejection of claim 8-11 and 13-15 under 35 U.S.C. §103 is respectfully requested.

Rejection of Claim 12
under 35 U.S.C. §103(a)

The Office Action rejects claim 12 under 35 U.S.C. §103(a) over Henley and Haruhiko as aforementioned in claim 8 in view of Lee. Applicants respectfully traverse this rejection.

Claim 8, from which claim 12 depends, recites connecting at least one pixel of a defective column to a second column line by applying a control signal that selectively closes a switch such that image data applied to the second

column line is applied to the at least one pixel. As discussed earlier, Henley, Haruhiko, and Keeney do not teach or disclose the invention defined by independent claim 8, upon which claim 12 depends. Furthermore, Lee, which was previously discussed, also does not bridge the substantial gap between independent claim 8 and Henley, Haruhiko, and Keeney.

Therefore, independent claim 8 and its dependent claim 12 are allowable over the cited references. Accordingly, withdrawal of the rejection of Claim 12 under 35 U.S.C. §103 is respectfully requested.

CONCLUSION

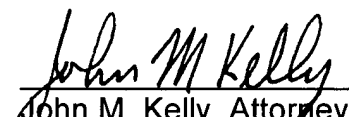
The applicants submit that all pending claims are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly requested.

If the Examiner deems that a telephone call would further the prosecution of this application, the Examiner is invited to call Mr. Eric Bram at (914) 333-9635. All correspondence should continue to be sent to the address of record (not to the signing attorney).

If these papers are not considered timely filed by the United States Patent and Trademark Office, or if any additional fees are required, kindly charge that fee to deposit account number 20-0782.

Respectfully submitted,

Nov. 4, 2003



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